

“Glide – Grass – Gas – Checklist If Able”

Just when you get comfortable with flying, the instructor and the engine begin plotting against you. It can happen anywhere, the engine RPMs start slowing, and the instructor says; “You just lost your engine, now what will you do?” The simulated engine out procedure requires memorization and immediate responses.



This training guide will help you develop the correct response(s) and actions for a simulated or a real engine failure. *Disclaimer:* This training guide was developed for a Cessna model 172S and should be cross-checked against the POH. In the case of any discrepancy between the POH and this training guide, the POH is the final authority. Other models of a Cessna 172 and any applicable STCs may require a modification of this training guide.

Immediate Callouts (Must Memorize)

“Glide 68 knots”

“Grass”

“Gas”

“Checklist if Able”

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Amplifying Instructions:

Items in Bold Red: Memorize, Callout and Do – Items in Red: Memorize, Callout, and Simulate

1. **Glide**, pitch to approximate attitude for **68 knots**, fast turn of trim wheel, maybe 1-1/2 turns from top to bottom, don't spend time refining speed – anything between 65 to 75 is good to start – get on with the rest, you can refine glide airspeed as time and altitude
 2. **Grass, or field**. Try to always select a field that will allow you to land into the wind. Identify and call out field. Make Mayday call on last frequency or 121.5 MHz – know how to rapidly set 121.5 in the GNS 430. While selecting field, try a restart (item 3. below) only if greater than 1,000'; otherwise go to shutting off gas (item 4. below). The altitude of 1,000' is a judgment call and is situational dependent
 3. **Gas - Restart** – **Mixture Rich, Throttle Max Forward, and Ignition Both, Fuel Pump On, Fuel Both, Fuel Shutoff In**. If prop is turning and you have ignition and gas the engine should restart. If prop is not turning, engage the starter. It is very important not to waste time trying a restart. If it will not restart in a short amount of time concentrate on making the field, avoiding obstacles and doing a fuel and electrical shutdown before the off-field landing.
 4. **Gas - Shutdown** after committing to an off-field landing – **Mixture Idle, Throttle Idle, Ignition Off, Fuel Pump Off, Fuel Shutoff Out, Doors Opened**. Once you have configured flaps and made your last Mayday call, **Master Off**
 5. **Checklist if Able** – all of the above must be memorized and practiced without the use of the checklist. This is an emergency response – time and altitude are critical. If and only if you have the altitude/time will the checklist come into play. In the traffic pattern, you must execute properly and in a timely manner. In the training area, *maybe* you will have the time to pull out the checklist if you lose the engine 2,500' or more above the ground.
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Important Notes

Make turns smoothly using positive and coordinated aileron and rudder inputs. Excessive and jerky aileron deflections and uncontrolled inputs add drag, reduces glide range and reduces the time you have to respond.

Once a field has been chosen, it is almost always best to stick with it than to change to a different field.

Landing into the wind is more important than one thinks. The energy after touchdown is proportional to groundspeed squared. I.e., touch down at 30 knots ground speed versus 50 means a difference of almost 1/3 less energy to displace after touchdown.

For your check ride the examiner is very likely to have you perform a simulated engine out at any altitude, but, unless you can land on the airport, **without any doubt**, abort the exercise and make a go-around. **When in doubt, go-around.**

Do not continue the simulated engine out maneuver below 1,000' above the ground unless over a runway. Don't turn a simulated exercise into a real emergency. For long glides periodically 'clear' the engine using short bursts of power. Periodically clearing the engine prevents valves sticking and sparkplug fouling

Don't wait for the examiner to terminate the simulated engine out exercise if not over a field, or if landing is in doubt (i.e., too long or too short), or continue it below 1,000' AGL. You must be proactive and terminate the simulated engine out maneuver. Remember you are PIC

In the glide you will lose about 100 feet for every 900 feet of forward travel. Thus for every 1000 feet of altitude loss, you will travel about 1.3 to 1.5 nm in a no-wind situation. A 180-degree turn will cause you to lose about 500' of altitude. **Plan accordingly.**